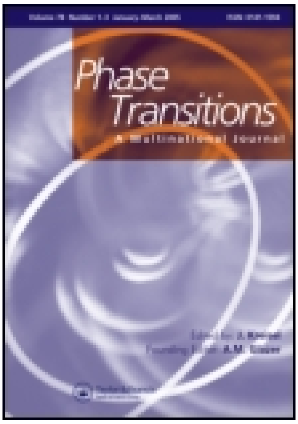

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Guest editors′ note

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Guest editors' note

Domain boundaries can assume functionalities which do not exist in the bulk. For example, the use of active domain boundaries is well advanced for magnetic domain walls and applied in the IBM race track technology by Stuart Parkin. Similar device applications are possible in ferroelectric materials, but have only partially been explored. The matrix in this case is often a ferroelastic crystal so that the position and shape of the domain wall is defined by the twinning of the underlying bulk material. Another application with high potential for the development of disruptive technologies is the discovery of highly conducting (or even superconducting) twin walls in insulating matrices. In the area of fundamental science, it is mainly the discovery of chiralities of twin walls and the ability of twin walls to trap defects which has stimulated large research efforts. It is the purpose of this Special Issue to present a series of papers dedicated to *Domain Boundary Engineering* which allow the reader to gauge current advances and stimulate future research.

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